

BIOLOGY: Secondary Education

MILLIKIN UNIVERSITY

[B.S.Degree - Biology, Traditional Track] - [Secondary Education Program] 8 Semester Plan

Semester #1	Term:	Hours	Spg/Fall/Evry	Semester #2	Term:	Hours	Spg/Fall/Evry
*BI 105/155: Ecology and Evolution & Lab		4		*BI 205 Cell Biology & Lab		4	
*CH 121/151: Gen Chem & Intro Chem Lab I		4		*CH 122/152: Gen Chem II & Intro Chem Lab II		4	
MA 110: College Algebra		3		*ED 120/170: Intro to American Ed & Education Internship		4	
IN 140: University Seminar		3		CO 200: Public Speaking		3	
EN 181: University Writing		3					
Semester Total		17		Semester Total		15	
Cumulative Total		17		Cumulative Total		32	
Semester #3	Term:	Hours	Spg/Fall/Evry	Semester #4	Term:	Hours	Spg/Fall/Evry
*BI 200: Genetics with Lab		4		*BI 125: Local Flora		4	
*CH 301/251: Organic Chem I & Intermed Chem Lab I or CH 203/205 Ess Organic and Biochem & Lab		4		*ED 201: Human Development, Gr 6-12 & K-12)		3	
*HI 203: US History to 1865 (or HI 204 since 1865)		3		US Structural Studies		3	
International Cultures & Structures		3		Creative Arts Requirement		3	
EN 281: Writing in the Disciplines		3		*BI 206: A&P I (or BI 207 A&P II) (or BI 301)		4	
Semester Total		17		Semester Total		17	
Cumulative Total		49		Cumulative Total		66	
Semester #5	Term:	Hours	Spg/Fall/Evry	Semester #6	Term:	Hours	Spg/Fall/Evry
*BI ____: Biology Content Category (or 3 credits)		4		*BI 240: Analysis of Biological Data		4	
*ED 115: Inst Strat of Indiv. w/ LD in K-12 Class		3		*ED 310: Creating Communities of Learners		3	
IN 350: Global Studies (or ICS) (or Literature)		3		*ED 321: Gen Secondary Methods & Assessment		3	
*PY 111/171: College Physics I & PY Lab I		4		*EN 302: Literacy		3	
*BI 391: Research		1		*PY 112:/172 College Physics II & PY Lab II		4	
Semester Total		15		Semester Total		17	
Cumulative Total		81		Cumulative Total		98	
Semester #7	Term:	Hours	Spg/Fall/Evry	Semester #8	Term:	Hours	Spg/Fall/Evry
*BI ____: Biology Content Category (or 3 credits)		4		*ED 478: Supervised Teaching in High School		12	
*BI 310: Sec Sci Content & Lab Devel (FALL only)		3		*ED 488: Education Senior Seminar		3	
*BI 326 Plant Biology		4					
*BI 481: Senior Seminar		1					
*ED 420: Inst Analysis Design & Assessment		1					
IN 350: Global Studies (or ICS) (or Literature)		3					
*PY 104 Planets Lab (Fall) (or PY 105 Stars & Galaxies Lab)(Spring)		1					
Semester Total		17		Semester Total		15	
Cumulative Total		115		Cumulative Total		130	

Major Requirements:

Core (12 Credits)	<ul style="list-style-type: none"> • BI105/155 Ecology & Evolution • BI205 Cell Biology • BI200 Genetics
Research (1 credit)	<ul style="list-style-type: none"> • BI391 or 392 Research
Senior Seminar (1 credit)	<ul style="list-style-type: none"> • BI481 or 482 Senior Seminar
Biology Upper-level Content Courses (15-16 credits) <i>Students must select at least 1 from each category</i>	<ul style="list-style-type: none"> • Ecology Content • Cell/Molec Bio Content • Systems Content • + 1 additional content
Plant Biology Focus (4 credits)	<ul style="list-style-type: none"> • Select ONE: <ul style="list-style-type: none"> ○ BI125 Local Flora ○ BI320 Field Ecology ○ BI380 Ecological Journeys
Chemistry (12 credits)	<ul style="list-style-type: none"> • CH121/151 Gen Chem 1 • CH122/152 Gen Chem 2 • Select ONE: <ul style="list-style-type: none"> ○ CH203/205 Essentials of Organic & Biochem ○ CH301/251 Organic Chemistry
Mathematics (6-7 credits)	<ul style="list-style-type: none"> • MA110 College Algebra • Data Analysis course (<i>must complete ONE</i>) <ul style="list-style-type: none"> ○ BI240 Analysis of Biological Data ○ MA130 Elementary Probability and Statistics with Spreadsheets ○ CS135 Introduction to Computer Science ○ Other course approved by department chair
Physics (9 credits)	<ul style="list-style-type: none"> • PY104 Planets Lab or PY105 Planets & Galaxies Lab • PY111/171 College Physics 1 • PY112/172 College Physics 2
Science Education Coursework (3 credits)	<ul style="list-style-type: none"> • BI310 Secondary Science Content and Laboratory Development
Education Coursework (39 credits)	<ul style="list-style-type: none"> • HI203 History of US to 1865 OR HI204 History of US since 1865 • ED115 Instructional Strategies for Individuals with Learning Disabilities • ED120 Intro to American Education • ED170/172 Education Internship • ED210 Human Development, Grades K-12 • ED310 Creating Communities of Learners • ED321 General Secondary Methods and Assessment • EN302 Methods for Teaching Literacy in the Classroom • ED420 Instructional Analysis, Design, and Assessment in Pre-student Teaching • ED477/478 Supervised Teaching • ED488 Education Senior Seminar

Biology Content Courses: *Students must select at least 1 from each category, for a total of 4. Must earn a C- or better*

Ecology	Cell/Molecular	Systems
BI 314 Ecology	BI 302 Histology	BI 301 Comparative Anatomy [^]
BI 320 Field Ecology	BI 304 Developmental Biology	BI 303 Entomology
BI 323 Animal Behavior	BI 312 Immunology	BI 306 Comparative Animal Physiology
BI 335 Physiological Ecology	BI 330 Microbiology	BI 322 Neurobiology
BI 340 Conservation Biology	BI 407 Molecular Genetics	BI 325 Vertebrate Biology
BI 380 Ecological Journeys #		BI 326 Plant Biology #
BI 404 Evolution		BI 206 & BI 207 Human Anatomy & Physiology I & II [^] <i>(must take both to count as one Content Course)</i>

#at one of these is required for the degree

[^]at least one of these is required for the degree

General Education Requirements:

University Studies Courses (37-39 credits)	<ul style="list-style-type: none"> • IN140 University Seminar • EN181 University Writing • EN281 Writing in the Disciplines • US Cultural Studies • US Structural Studies • Global Studies • International Cultures & Structures (<i>must complete 2</i>) • Creative Arts • Natural Science with a Lab Experience (<i>met through the major</i>) • Public Speaking (CO 200) • Quantitative Reasoning (<i>met through math course for the major</i>)
College of Arts & Sciences Distribution (6 credits)	<ul style="list-style-type: none"> • Literature course • History course